

**Abstract****Optical microscope with modifiable lighting and operating process of such a microscope**

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An optical microscope is adapted for observation of several spots of an object by a modifiable optical transmission screen placed on the path of the optical beam and able to generate in the object plane a screen image coinciding substantially with the spots of the object. The modifiable optical transmission screen can comprise a

10 matrix of mirrors, each of the mirrors presenting a first position enabling the light beam to be reflected to the object along the optical path and a second position enabling the light beam to be diverted from the optical path. Alternatively, the modifiable optical transmission screen can comprise a matrix of liquid crystal elements, each of the liquid crystal elements presenting a first transparent state, a

15 second opaque state and, possibly, a third polarising state. The light source can be a light-emitting diode array.